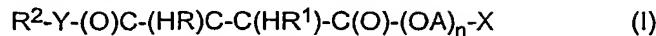


CLAIMS

1. An anionic surfactant of the formula (I):



5 wherein one of R and R¹ is a C₆ to C₂₂ linear or branched alkyl or alkenyl, and the other is hydrogen;

Y is O, or NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR³(=CH₂))-CH₂-C(=CH₂)- where R³ is hydrogen or methyl;

when Y is O, R² is hydrogen, or a salt, or a C₁ to C₆ linear or branched alkyl, or

10 an optionally substituted C₃ to C₁₀ linear or branched alkenyl;

when Y is NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR³(=CH₂))-CH₂-C(=CH₂)- where R³ is hydrogen or methyl, R² is hydrogen or methyl;

OA is an oxyalkylene group;

n is 2 to 100; and

15 X is a group comprising at least one acidic H atom, or a salt thereof.

2. An anionic surfactant according to claim 1 wherein one of R and R¹ is a C₁₂ to C₂₀ alkenyl group.

20 3. An anionic surfactant according to either one of claims 1 and 2 wherein n is in the range from 5 to 30.

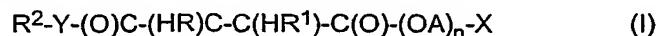
4. An anionic surfactant according to any one of the preceding claims wherein X comprises at least one sulphur atom.

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5. An anionic surfactant according to any one of the preceding claims wherein R² is a group of formula -CH₂-C(=CH₂)-R⁴ where R⁴ is hydrogen or methyl; or a group of formula -R⁵-O-C(O)-C(=CH₂)-R⁶ where R⁵ is hydrogen or methyl, and R⁶ is a C₂ to C₆ linear or branched alkyl.

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6. A method of free radical initiated addition polymerisation of at least one ethylenically unsaturated monomer in the presence of a surfactant comprising at least one anionic surfactant of the formula (I):



35 wherein one of R and R¹ is a C₆ to C₂₂ linear or branched alkyl or alkenyl, and the other is hydrogen;

Y is O, or NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR³(=CH₂))-CH₂-C(=CH₂)- where R³ is

hydrogen or methyl;

when Y is O, R² is hydrogen, or a salt, or a C₁ to C₆ linear or branched alkyl, or an optionally substituted C₃ to C₁₀ linear or branched alkenyl;

when Y is NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR³(=CH₂))-CH₂-C(=CH₂)- where R³ is

5 hydrogen or methyl, R² is hydrogen or methyl;

OA is an oxyalkylene group;

n is 2 to 100; and

X is a group comprising at least one acidic H atom, or a salt thereof.

10 7. A method according to claim 6 wherein the ethylenically unsaturated monomer(s) is or comprises at least one vinyl monomer.

8. A method according to claim 7 wherein the vinyl monomer(s) represent at least 60% by weight of the ethylenically unsaturated monomer(s).

15 9. A method according to any one of claims 6 to 8 wherein the at least one anionic surfactant of the formula (I) is used for a seed stage, and at least one non-ionic surfactant of the formula (II) below is used for a particle growth stage in emulsion polymerisation:

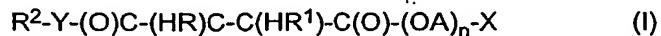


20 wherein R, R¹, R², Y, OA and n are as defined for the anionic surfactant of formula (I), and Z is O, or NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR¹⁰(=CH₂))-CH₂-C(=CH₂)- where R¹⁰ is hydrogen or methyl;

when Z is O, R⁹ is hydrogen, or a C₁ to C₆ linear or branched alkyl, or an optionally substituted C₃ to C₁₀ linear or branched alkenyl;

25 when Z is NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR¹⁰(=CH₂))-CH₂-C(=CH₂)- where R¹⁰ is hydrogen or methyl, R⁹ is hydrogen or methyl.

10. The use of an anionic surfactant of the formula (I):



30 wherein one of R and R¹ is a C₆ to C₂₂ linear or branched alkyl or alkenyl, and the other is hydrogen;

Y is O, or NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR³(=CH₂))-CH₂-C(=CH₂)- where R³ is hydrogen or methyl;

when Y is O, R² is hydrogen, or a salt, or a C₁ to C₆ linear or branched alkyl, or

35 an optionally substituted C₃ to C₁₀ linear or branched alkenyl;

when Y is NH, or -NH-CH₂-C(=CH₂)-, or -N(CH₂-CR³(=CH₂))-CH₂-C(=CH₂)- where R³ is hydrogen or methyl, R² is hydrogen or methyl;

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OA is an oxyalkylene group;
n is 2 to 100; and
X is a group comprising at least one acidic H atom, or a salt thereof,
as a non-migratory surfactant in emulsion polymerisation.

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